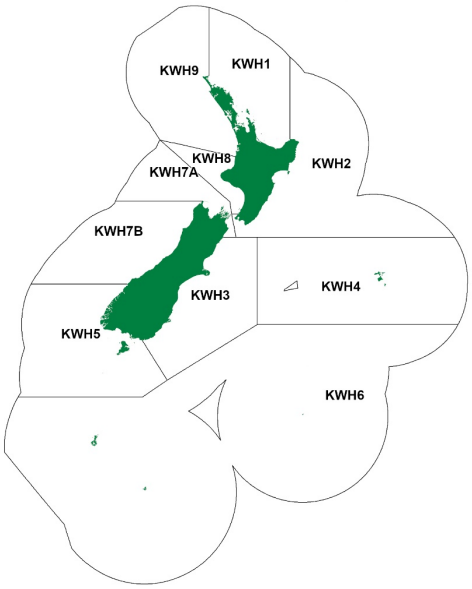
KNOBBED WHELK (KWH)

(*Austrofusus glans*)



1. FISHERY SUMMARY

Knobbed whelks (*Austrofusus glans*) were introduced into the Quota Management System on 1 October 2006. The fishing year is from 1 October to 30 September and commercial catches are measured in greenweight. TACs have been allocated in 10 QMAs (Table 1). This species is managed under Schedule 6 of the Fisheries Act for all stocks, which allows for them to be returned to where they were taken (as soon as practicable after being taken) providing they are likely to survive.

Table 1: Current TAC, TACC, and allowances for customary fishing, recreational fishing, and other sources of mortality for *Austrofusus glans*.

QMA	TAC (t)	TACC (t)	Customary fishing	Recreational fishing	Other sources of mortality
KWH1	3	1	1	1	0
KWH 2	3	1	1	1	0
KWH 3	5	3	1	1	0
KWH 4	8	6	1	1	0
KWH 5	3	1	1	1	0
KWH 6	4	2	1	1	0
KWH 7A	53	50	1	1	1
KWH 7B	3	1	1	1	0
KWH 8	3	1	1	1	0
KWH 9	3	1	1	1	0

1.1 Commercial fisheries

Target fishing for knobbed whelks is by baited pots. Because economic returns for whelk fishing are poor, most of the historical catch is bycatch from oyster and scallop dredging and from bottom trawling. Due to the low value of this species it is likely that there is a high level of unreported discarded catch.

Landings shown in Table 2 for the period 1990–91 to 2005–06 were recorded under the generic code for whelks (WHE); however, the Ministry considers that in FMA 1, 2, 7, and 8 most reported landings were of the knobbed whelk *Austrofusus glans*. In FMA 3, 4, 5, and 6, the Ministry considers that about a third of reported landings were of the knobbed whelk, whereas the remainder were the large ostrich foot shell *Struthiolaria papulosa*.

Reported landings of knobbed whelk in FMA 1, FMA 2, and FMA 8 have been relatively low and variable since the 1990s and have been (largely or all) accounted for as bycatch. In FMA 7 in the early 1990s higher catches were reported as part of experimental fisheries in Golden Bay and Tasman Bay to provide stock assessment information in these areas (Tables 2 and 3). In the period 2011–12 to 2019–20 total

reported landings averaged just 0.39 t, although 0.8 t was landed in 2019–20. Landings are split into two tables (before and after the 2006 fishing year) because reporting requirements changed when knobbed whelks entered the QMS.

Table 2: Reported landings (t) of whelks (WHE) by FMA from 1990–91 to 2005–06 from landing returns. See section 1.1 for an explanation of the proportion of WHE that are considered to be knobbed whelks.

Fishing year	WHE 1	WHE 2	WHE 3	WHE 4	WHE 5	WHE 6	WHE 7	WHE 8	WHE 9	Total
1990–91	0	0	0	0	0	0	44.976	0	0	44.976
1991–92	0	0	0	0	0	0	26.935	0	0	26.935
1992–93	0.021	0	0.018	0	0	0	1.762	0	0	1.801
1993–94	0	0.135	0	0	0	0	49.278	0	0	49.413
1994–95	0	0.707	0.545	0	0	0	21.458	0.593	0	23.303
1995–96	0	0.089	0.178	0	0	0	27.596	0	0	27.863
1996–97	0.002	0.174	0.144	0	0.003	0	8.959	0	0	9.282
1997–98	0	0	0.102	0.150	0	0	0.884	0	0	1.136
1998–99	0	0	0.223	2.205	2.470	0.150	0.570	0	0	5.618
1999–00	0	0	2.286	7.953	3.250	0.790	0.080	0	0	14.359
2000–01	0	0	10.467	17.497	3.538	4.765	0.141	0	0	36.408
2001–02	0	0	1.474	3.995	0.515	1.755	0.002	0	0	7.741
2002–03	0	0	0.212	0.020	0.004	0.780	0.077	0	0	1.093
2003–04	0.035	0	0.491	0	0	0.335	4.217	0	0	5.078
2004–05	0.008	0	0.021	0	0	0.335	0.234	0	0.047	0.639
2005–06	0	0	0.163	0	0	0	0.032	0	0	0.195

Table 3: Landings of Knobbed whelk (KWH) by QMA from 2006–07 to present from monthly harvest returns (MHR).

QMA	KWH 1		KWH 2		KWH 3		KWH 4		KWH 5	
	Landing	TACC	Landing	TACC	Landing	TACC	Landing	TACC	Landing	TACC
2006–07	0.080	1	0	1	0.010	3	0	6	0	1
2007–08	0.077	1	0	1	0.006	3	0	6	0	1
2008–09	0.103	1	0	1	0.121	3	0	6	0	1
2009–10	0.088	1	0	1	0.053	3	0	6	0	1
2010–11	0.473	1	0.036	1	0	3	0	6	0	1
2011–12	0.721	1	0.070	1	0.088	3	0	6	0	1
2012–13	0.551	1	0	1	0.003	3	0	6	0.001	1
2013–14	0.116	1	0	1	0.159	3	0	6	0.002	1
2014–15	0.039	1	0	1	0.020	3	0	6	0	1
2015–16	0.011	1	0	1	0.031	3	0	6	0	1
2016–17	0	1	0	1	0.210	3	0	6	0	1
2017–18	0	1	0	1	0.140	3	0.020	6	0	1
2018–19	0	1	0	1	0.375	3	0.001	6	0.001	1
2019–20	0	1	0	1	0.856	3	0	6	0	1

QMA	KWH 6		KWH 7A		KWH 7B		KWH 8		Total	
	Landing	TACC	Landing	TACC	Landing	TACC	Landing	TACC	Landing	TACC
2006–07	0	2	0.046	50	0	1	0	1	0.136	67
2007–08	0	2	9.174	50	0.104	1	0	1	9.361	67
2008–09	0.001	2	0.226	50	0.008	1	0	1	0.459	67
2009–10	0	2	18.500	50	0	1	0	1	18.614	67
2010–11	0	2	16.033	50	0	1	0	1	16.542	67
2011–12	0	2	0	50	0.008	1	0	1	0.887	67
2012–13	0	2	0	50	0.014	1	0	1	0.569	67
2013–14	0	2	0	50	0	1	0	1	0.277	67
2014–15	0	2	0	50	0	1	0.108	1	0.167	67
2015–16	0	2	0	50	0	1	0	1	0.032	67
2016–17	0	2	0	50	0	1	0	1	0.210	67
2017–18	0	2	0	50	0	1	0.010	1	0.170	67
2018–19	0	2	0	50	0	1	0	1	0.377	67
2019–20	0	2	0	50	0	1	0	1	0.856	67

1.2 Recreational fisheries

There are no estimates of recreational catch.

1.3 Customary non-commercial fisheries

There are no estimates of current customary catch.

1.4 Illegal catch

There is no known illegal catch of this whelk.

1.5 Other sources of mortality

There is no information on other sources of mortality for this whelk.

2. BIOLOGY

The knobbed whelk *A. glans*, is a widely distributed gastropod found from low tide to about 600 m (Powell 1979). This carnivorous whelk grows up to 5 cm long and occurs throughout New Zealand where it is found on sandy/silt/mud substrate. There is very little published about the biology of this species; most references are identification notes or records of occurrence. It is a scavenger that buries in the substrate when not feeding. A wide variety of invertebrates including polychaetes, gastropods, and bivalves occur within the wide depth range of the knobbed whelk, but no interdependent relationships are documented with *A. glans*.

3. STOCKS AND AREAS

For management purposes stock boundaries are based on FMAs. There is no biological information on stock structure, recruitment patterns, or other biological characteristics which might indicate alternative stock boundaries.

4. STOCK ASSESSMENT

4.1 Estimates of fishery parameters and abundance

There are no estimates of fishery parameters or abundance for any knobbed whelk fishstock.

4.2 Biomass estimates

There are no biomass estimates for any knobbed whelk fishstock.

4.3 Yield estimates and projections

There are no estimates of *MCY* for any knobbed whelk fishstock.

There are no estimates of *CAY* for any knobbed whelk fishstock.

5. STATUS OF THE STOCKS

- **KWH 7A** - *Austrofusus glans*

Stock Status	
Year of Most Recent Assessment	No formal assessment done of any of the stocks
Assessment Runs Presented	–
Reference Points	Target: None Soft Limit: None Hard Limit: None Overfishing threshold: None
Status in relation to Target	Unknown
Status in relation to Limits	Unknown
Status in relation to Overfishing	Unknown
Historical Stock Status Trajectory and Current Status Unknown	

Fishery and Stock Trends	
Recent Trend in Biomass or Proxy	Unknown

Recent Trend in Fishing Mortality or Proxy	In 1990–96 the landings for KWH 7 averaged 28.7 t. However, since that time, landings have declined in this area to less than 19 t per year. Landings in all other Fishstocks have been variable but total catch across all Fishstocks has been less than 19 t per year since 2001–02.
Other Abundance Indices	–
Trends in Other Relevant Indicators or Variables	–

Projections and Prognosis	
Stock Projections or Prognosis	–
Probability of Current Catch or TACC causing Biomass to remain below or to decline below Limits	Soft Limit: Unknown Hard Limit: Unknown It is unknown what effect fishing to date has had on *Austrofusus glans* stocks
Probability of Current Catch or TACC causing Overfishing to continue or to commence	–

Assessment Methodology		
Assessment Type	–	
Assessment Method	–	
Assessment Dates	Latest assessment: –	Next assessment: –
Overall assessment quality rank	–	
Main data inputs (rank)	–	
Data not used (rank)	–	
Changes to Model Structure and Assumptions	–	
Major Sources of Uncertainty	–	

Qualifying Comments
–

Fishery Interactions
–

6. FOR FURTHER INFORMATION

Morton, J; Miller, M (1968) *The New Zealand sea shore*. Collins, Auckland. 638 p.
Powell, A W B (1979) *New Zealand Mollusca*. Marine, land and freshwater shells. Collins, Auckland. 500 p.